"A SIMULATOR FOR SINGLE PHASE INDUCTION MOTOR-CONVERTER PERFORMANCE"

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ABSTRACT

This paper presents a simulator suitable for both transient and steady state performance prediction of a single phase induction motor (SPIM). The powerful Sim-Power Systems Blockset is used as a simulation platform. The SPIM model includes representation of both main and auxiliary winding in stationary reference frame. The simulator includes a Triac based ac power converter. Both currents and voltage waveforms can be simulated for different firing angles. The simulator allows both current speed and torque-speed characteristics calculation. Direct and soft starting tests were performed on a SPIM driven window type air conditioning unit. The simulated and experimental tests are compared showing close agreement.